UPDATE OF GROWING AREA CLASSIFICATIONS

The official list of all New Hampshire shellfish growing areas is presented in Appendix 1. Fecal coliform data used to calculate the NSSP statistics presented below are in Appendix 2. The reader should note that for most sites, only the most recent 30 samples in Appendix 2 were used for calculation of statistics. Furthermore, Appendix 2 also summarizes the rainfall and seasonal criteria applied to the data, which vary for different growing areas, for statistical calculations.

Great Bay

The Great Bay growing area includes 3,033 acres of Approved waters, 742 acres of Restricted waters, and 442 acres of Prohibited waters (Figure 7).

NSSP statistics for Great Bay sites are presented in Table 3. Water quality data for these sites, which are all located in the Approved area, generally show low fecal coliform levels and indicate water quality that is consistent with the Approved classification. The only change to this area's classification involved the rainfall threshold to trigger an "emergency closure," which was changed from 3.0 inches to 2.5 inches. This revision was implemented at all growing waters in coastal New Hampshire.

Table 3: NSSP Statistics for Stations in Great Bay
(Refer to Figure 1 for sampling site locations)

	GB16	GB4A	GB5
Count	30	30	30
Geomean	5.6	6.2	4.2
Est. 90th	28.7	28.7	14.5
Class.	A	A	A

Little Bay

The Upper Little Bay growing area (Figure 7) includes 1,149 acres of Conditionally Approved waters, while the Lower Little Bay growing area (Figure 8) includes 658 acres of Conditionally Approved Waters and 44 acres of Prohibited/Safety Zone waters associated with the Little Bay Boat Club and and Great Bay Marine, Inc. NSSP statistics for Little Bay sites are presented in Table 4. Water quality data for these sites generally show low fecal coliform levels and indicate water quality that is consistent with the Approved classification.

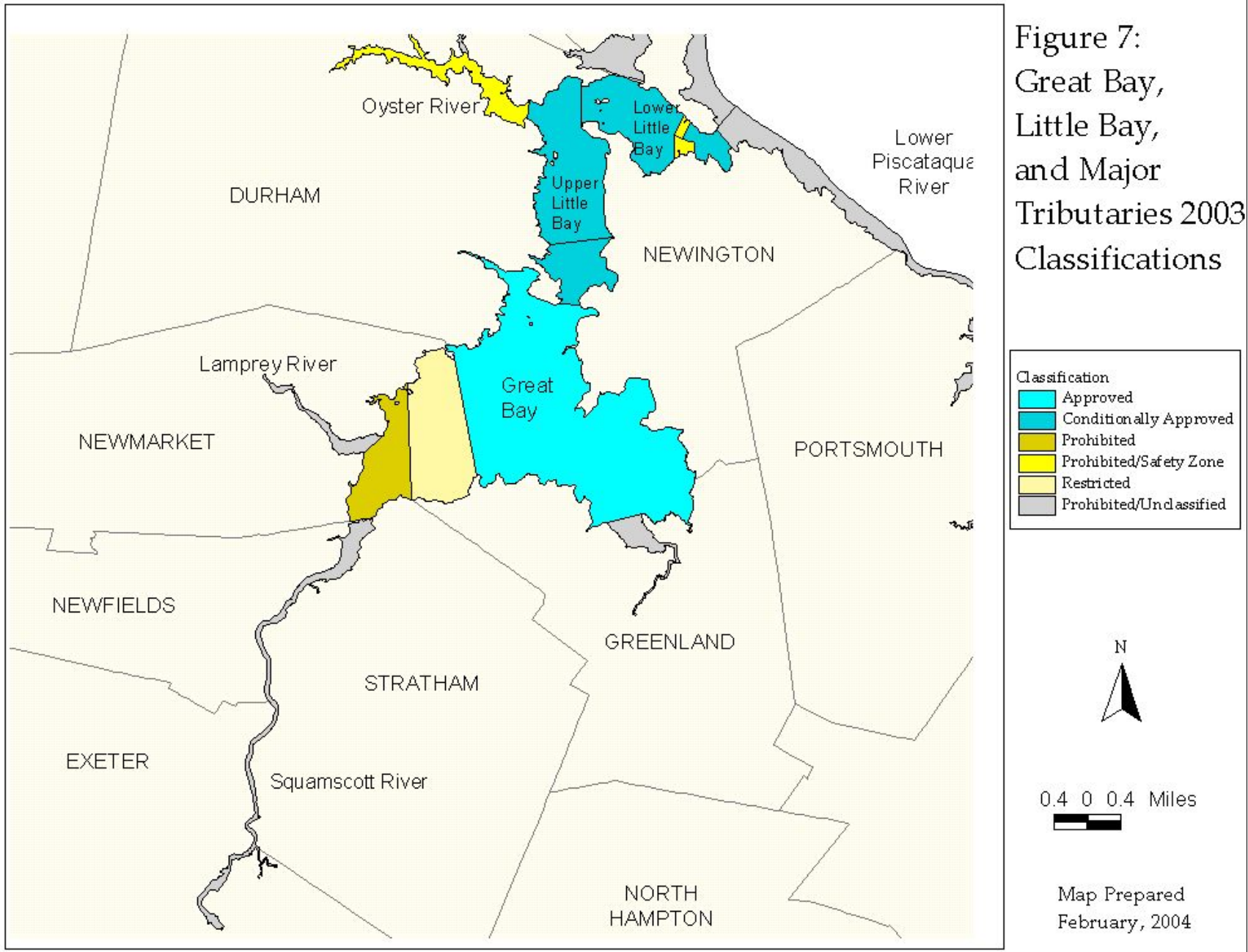

Figure 7: Great Bay, Little Bay, and Major Tributaries 2003 Classifications

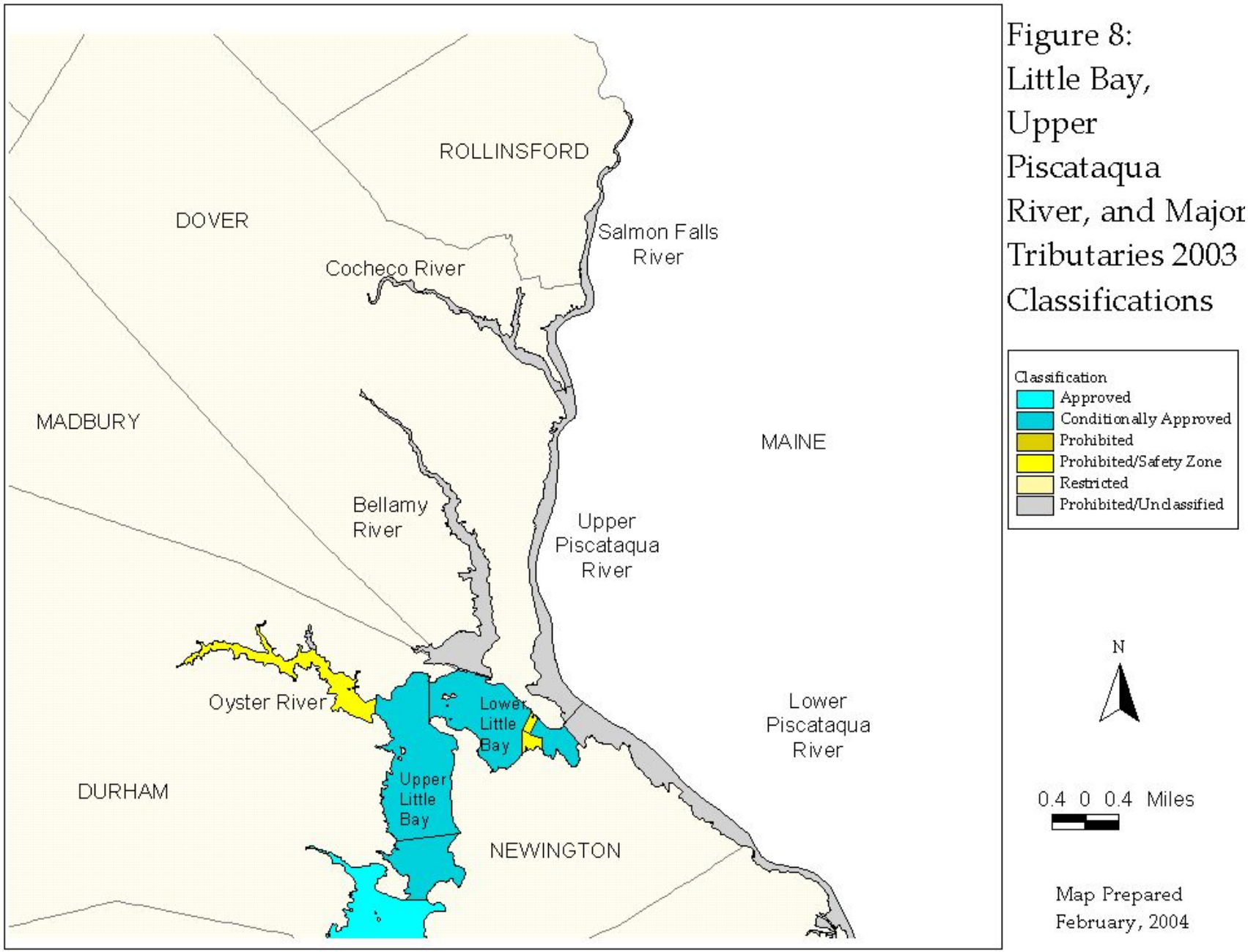
ROLLINSFORD
DOVER
Salmon Falls River
Cocheco River
MADBURY
MAINE
Bellamy River
Upper Piscataqua River
Oyster River
Lower Little Bay
Upper Little Bay
Lower Piscataqua River
DURHAM
NEWINGTON
Figure 8: Little Bay, Upper Piscataqua River, and Major Tributaries 2003 Classifications
Classification
Approved
Conditionally Approved
Prohibited
Prohibited/Safety Zone
Restricted
Prohibited/Unclassified
N
0.4 0 0.4 Miles
Map Prepared February, 2004

Table 4: NSSP Statistics for Stations in Little Bay
(Refer to Figure 1 for sampling site locations)

	GB17	GB19	GB25	GB27	GB28	GB50	GB6	GB7A
Count	30	30	30	30	30	30	30	30
Geomean	6.3	5.5	9.1	5.9	5.2	6.5	5.7	7.1
Est. 90th	29.9	27.5	40.3	29.0	21.3	32.5	22.2	34.6
Class.	A	A	A	A	A	A	A	A

The completion of a sanitary survey for the Oyster River in early 2003 brought several substantial changes to the classification of Little Bay. With the exception of the previously-classified marina safety zones, all of Little Bay (including the northwest segment of Lower Little Bay that had been Prohibited/Unclassified) were reclassified as conditionally approved, with the condition relating to proper operation and performance of the Durham wastewater treatment facility. Another condition will relate to the seasonal closures due to boat sewage concerns. Seasonal closures and reopenings, likely to occur in spring and fall, respectively, are based on weekly surveys of numbers of boats capable of discharging sewage, and the capacity of the surrounding waters (e.g., safety zones) to dilute potential sewage discharges to safe levels.

Piscataqua River

The Upper Piscataqua River growing area stretches from the mouths of the Cocheco and Salmon Falls rivers to Dover Point and includes 419 acres of Prohibited/Unclassified Waters (Figure 8). The Lower Piscataqua River growing area stretches from Dover Point to the northwest corner of New Castle and the southeast corner of Seavey Island, and includes 791 acres of Prohibited/Unclassified Waters (Figure 9).

NSSP statistics for Piscataqua River sites are presented in Table 5. Water quality data generally show high fecal coliform levels in the upper reaches of the river, with decreasing geometric means and measures of variability in the downstream direction. Work to complete a sanitary survey of the Upper Piscataqua River will continue in 2004. It is anticipated that at least some of the river around the Dover wastewater treatment plant outfall will become part of a Prohibited/Safety Zone. A dye study to enable delineation of this zone is tentatively scheduled for 2004, pending completion of a dredging project to correct sediment plugging of the outfall's diffuser ports.

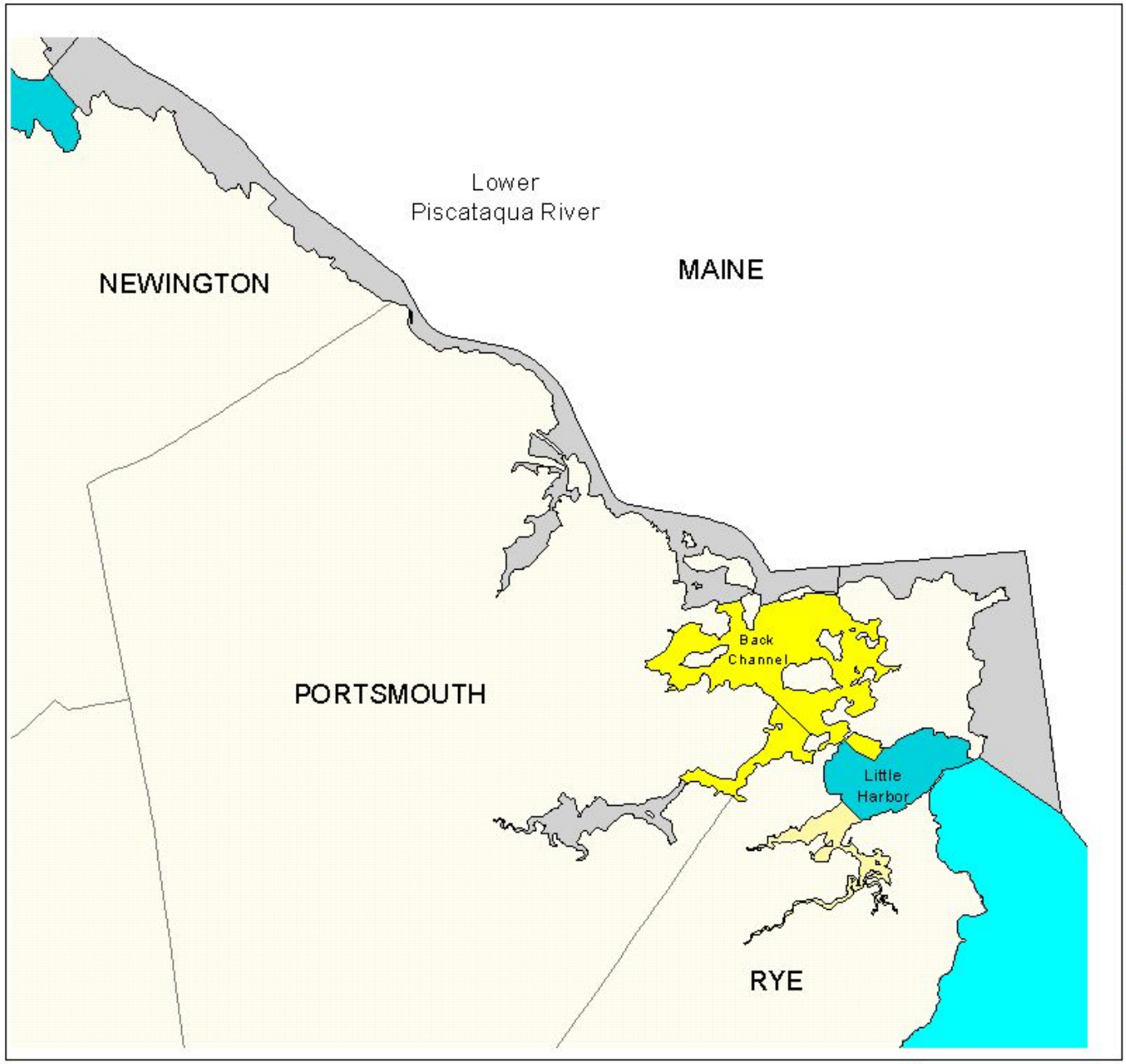

Figure 9: Lower Piscataqua River, Little Harbor, Back Channel 2003 Classifications

Classification
- Approved
- Conditionally Approved
- Prohibited
- Prohibited/Safety Zone
- Restricted
- Prohibited/Unclassified

N

0.4 0 0.4 Miles

Map Prepared
February, 2004

Table 5: NSSP Statistics for Stations in the Piscataqua River
(Refer to Figures 2 and 3 for sampling site locations)

	GB21	GB22	GBA7	GB20	GBA10	GBA11.5	GB18	GB24
Count	30	30	30	30	30	30	30	30
Geomean	44.0	21.9	27.6	21.4	14.8	7.6	6.8	6.4
Est. 90th	177.9	140.4	212.4	118.8	81.6	34.2	33.4	31.2
Class.	R	R	R	R	R	R	A	A

Bellamy River

The Bellamy River growing area stretches from the head-of-tide in Dover to the mouth of the River at the Route 4/Scammel Bridge (Figure 8). All waters in this 432-acre area are Prohibited/Unclassified.

NSSP statistics for Bellamy River sites are presented in Table 6. The highest and most variable fecal coliform levels are found in the upstream sites, with decreasing geometric means and measures of variability observed in the downstream direction. The only site that meets Approved criteria is Site GB2, located at the mouth of the river at the Scammel Bridge. It is possible that other sites could meet the Conditionally Approved classification with appropriate rainfall conditions, and a good deal of effort to complete a sanitary survey has been accomplished. Before any areas can be considered for harvesting, a careful examination of municipal sewage collection infrastructure (pump stations, sewer lines, etc.) is needed to assess the risk of overflows and the City of Dover's ability to quickly detect and report these events. This examination will be conducted in 2004, with a decision on how to proceed with the sanitary survey to follow.

Table 6: NSSP Statistics for Stations in the Bellamy River
(Refer to Figure 1 for sampling site locations)

	GB2	GB33	GB34
Count	30	30	24
Geomean	5.5	8.7	8.5
Est. 90th	27.6	60.6	60.2
Class.	A	R	N

Little Harbor/Back Channel

The Little Harbor and Back Channel growing areas (Figure 9) were reclassified in December 2001 to include 512 acres of Prohibited/Safety Zone around the Portsmouth wastewater treatment plant outfall and Wentworth Marina, 93 acres of Restricted waters upstream of Sheafes Point, 198 acres of Conditionally Approved waters in Little Harbor, and 96 acres of Prohibited/Unclassified waters in Sagamore Creek upstream of the Route 1A bridge.

NSSP statistics for Little Harbor sites are presented in Table 7. Fecal coliform data in Little Harbor meet Conditionally Approved criteria (0.50-inch rainfall criterion, seasonal closures for boat sewage concerns). Note that several of the sites in Table 7, namely the "LHB" sites, are relatively new, having been created in 2001. Seasonal closures for boat sewage are based on weekly surveys of numbers of boats capable of discharging sewage, and the capacity of surrounding waters to dilute potential discharges to safe levels.

Table 7: NSSP Statistics for Stations in Little Harbor
(Refer to Figure 3 for sampling site locations)

	LHB1	LHB2	T13	LHB13	T6	LHB6	T14	T7
Count	15	16	30	16	30	15	30	30
Geomean	3.4	4.0	4.3	4.8	4.1	3.9	13.8	20.9
Est. 90th	8.1	8.0	14.1	14.0	10.3	12.3	83.0	135.5
Class.	N	N	A	N	A	N	R	R

NSSP statistics for Back Channel sites are presented in Table 8. Fecal coliform data generally meet Conditionally Approved criteria at some sites, although the 2001 sanitary survey classifies all of Back Channel as part of a Prohibited/Safety Zone for the Portsmouth wastewater treatment facility.

Table 8: NSSP Statistics for Stations in Back Channel
(Refer to Figure 3 for sampling site locations)

	LHB16	LHB5	LHB8	LHB9
Count	16	15	16	16
Geomean	4.9	3.9	5.4	9.2
Est. 90th	19.8	9.6	16.4	31.8
Class.	N	N	N	N

Atlantic Coast

The Atlantic Coast growing area extends to the three-mile limit under the state's jurisdiction and includes the New Hampshire waters around the Isles of Shoals (Figure 10). The growing area includes 38,979 acres of Approved waters (half of which were previously classified as Conditionally Approved, but were reclassified at the start of 2003), 128 acres or Prohibited waters, and 3,001 acres classified as Prohibited/Safety Zone. In consultation with the US Food and Drug Administration,

DES changed the Conditionally Approved area to Approved (effective January 1, 2003). This change was not in response to a change in growing area sanitary quality, but rather was implemented to ensure consistent application of NSSP guidelines and procedures (i.e., reserving the use of the conditional classification for events and conditions that occur relatively frequently, while using emergency closure procedures for more infrequent events such as rainstorms of over three inches). Additionally, the rainfall threshold to trigger an area-wide emergency closure was changed from three inches to 2.5 inches.

NSSP statistics for Atlantic Coast shore sites are presented in Table 9. The results of the 2003 sampling program reveal a need to reclassify some areas. Sites AC3 and AC4B have historically shown good water quality, but both sites now show a degree of bacterial variability that exceeds the NSSP criterion for Approved waters. The results at AC4B are consistent with a change in a nearby pollution source, namely Little River. The flow from this tidal stream was dramatically increased as part of a saltmarsh restoration project, and monitoring data from the stream shows that bacterial loading has increased to the level that would adversely affect water quality at AC4B. Consequently, the current prohibited area around the mouth of the river needs to be expanded. The results at site AC3 were largely caused by a very high bacterial result from a sample collected in February 2003, and to a lesser extent by elevated FC levels observed in March and June of 2003. These results are not consistent with any change in pollution sources near the site, and examination of field notes, weather data, shoreline conditions, and nearby sewage collection infrastructure performance gave no explanation for the high bacteria counts. A new prohibited area around this site needs to be established. Recommendations for the new prohibited areas at both sites, which will call for a closed-area radius of 1,500 feet, are detailed in a 2004 DES Shellfish Program report *Triennial Shellfish Growing Area Update for the Atlantic Coast, Gulf of Maine, New Hampshire*.

One other change to shoreline sampling stations involves the discontinuation of site AC1, and the creation of site AC1A. When the Atlantic Coast sanitary survey was originally published in 2000, the southernmost sampling site was AC1, located on Seabrook Beach and within the borders of the safety zone for the Seabrook WWTF. Per the recommendations in the original sanitary survey, a dye study on the facility was done in 2001. The study confirmed that the northern extent of the safety zone should remain at the jetty near the entrance to Hampton Harbor. In order to continually monitor the adequacy of this boundary sampling at site AC1 was discontinued in 2003 in favor of a new site (AC1A), located at the boundary of the safety zone. Water quality at this new site appears to meet Approved criteria (although 30 samples have not yet been collected), and is similar to that of nearby Site AC2. Once the required minimum of 30 samples is achieved, sampling at site AC2 will likely be discontinued.

Table 9: NSSP Statistics for Stations on the Atlantic Coast/Shore Sites
(Refer to Figures 4a and 4b for sampling site locations)

	AC1A	AC2	AC3	AC4B	AC10	AC5A	AC6G	AC7B	AC8
Count	9	30	30	30	30	30	30	30	30
Geomean	3.4	5.9	7.6	9.6	4.2	6.0	5.2	3.7	5.9
Est. 90th	11.4	24.9	55.9	67.3	13.7	40.6	22.1	14.4	32.4
Class.	N	A	R	R	A	A	A	A	A

While the classification of Atlantic waters largely relies on the water sampling conducted at the shoreline sites (due to their proximity to potential/actual pollution sources), the DES continues to conduct sampling at boat sites as well. With the exception of ACB20, each of these sites is paired with a corresponding shore site and is located approximately 500 - 1000 feet from shore. Site ACB20 is located well offshore, approximately one nautical mile south of White Island. Statistics for these sites (Table 10) show compliance with Approved criteria.

Table 10: NSSP Statistics for Stations on the Atlantic Coast/Boat Sites
(Refer to Figures 4a and 4b for sampling site locations)

	ACB1	ACB1A	ACB2	ACB3	ACB4	ACB5	ACB6	ACB7	ACB8	ACB20
Count	25	7	30	30	30	30	30	30	28	30
Geomean	3.9	3.5	2.5	2.3	2.2	2.3	2.3	2.4	2.6	2.0
Est. 90th	15.5	13.8	6.8	5.3	4.2	3.8	3.8	4.0	5.4	2.0
Class.	A	N	A	A	A	A	A	A	A	A

Rye Harbor

The Rye Harbor growing area includes 47 acres of water, all of which are classified as Prohibited/Unclassified (Figure 10). NSSP statistics for Rye Harbor sites are presented in Table 11. Site RH1, located in a tributary on the south side of the harbor, continues to show high and quite variable fecal coliform levels. Pollution source investigations by the DES Watershed Assistance Section are still ongoing in this area.

Table 11: NSSP Statistics for Stations in Rye Harbor
(Refer to Figure 4a for sampling site locations)

	RH1	RH2	RH3	RH4
Count	30	30	30	30
Geomean	19.9	6.4	4.1	10.2
Est. 90th	149.2	33.5	16.3	63.0
Class.	R	A	A	R

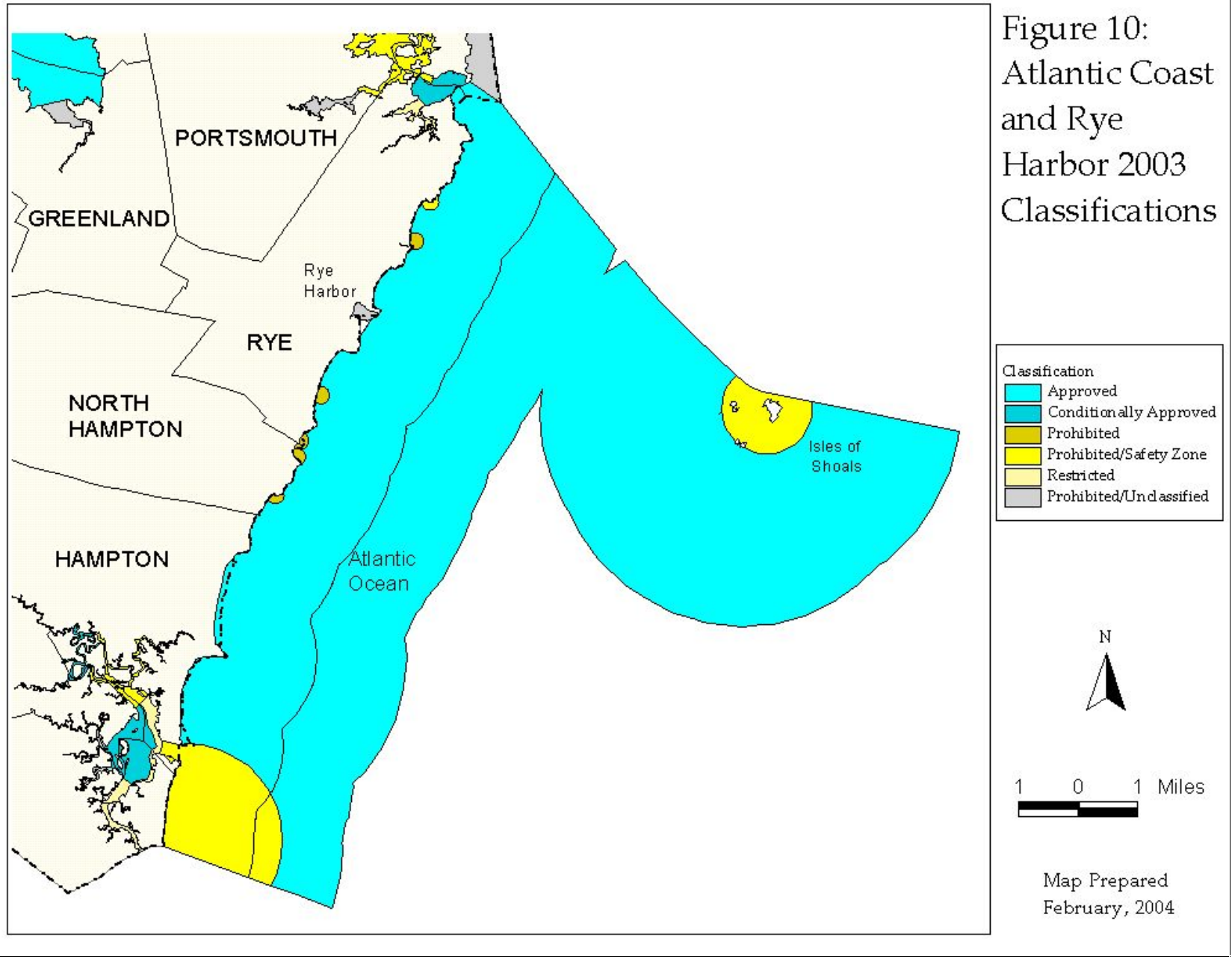

Figure 10: Atlantic Coast and Rye Harbor 2003 Classifications

Hampton/Seabrook Harbor

The Hampton/Seabrook Harbor and Tributaries growing area encompasses 1,068 acres, including 474 acres classified as Conditionally Approved, 264 acres classified as Restricted, 208 acres classified as Prohibited/Safety Zone, and 121 acres classified as Prohibited/Unclassified (Figure 11).

NSSP statistics for Hampton/Seabrook Harbor sites and for the Hampton Falls River/Taylor River sites are presented in Table 12 and 13, respectively. The conditions under which harvesting is allowed in this area are quite restrictive, including a shortened season of November-May, and a rainfall closure threshold of 0.25 inches (prior to January 1, 2003, the rainfall thresholds were 0.10 inches in November, April and May, and 0.25 inches in December, January, February, and March). Under these conditions, all sites meet Conditionally Approved criteria. Work to re-evaluate the current classification of all areas of the harbor itself is ongoing.

Table 12: NSSP Statistics for Stations in Hampton/Seabrook Harbor
(Refer to Figure 5 for sampling site locations)

	HH10	HH11	HH12	HH17	HH18	HH19	HH1A	HH2B	HH5B	HH5C
Count	30	30	30	30	30	30	30	30	30	30
Geomean	3.1	4.1	3.5	3.0	3.3	3.6	4.5	3.7	4.2	3.1
Est. 90^{th}	8.6	11.4	9.9	6.3	8.1	12.0	14.6	10.6	13.9	8.5
Class.	A	A	A	A	A	A	A	A	A	A

Table 13: NSSP Statistics for Stations in Hampton Falls and Taylor Rivers
(Refer to Figure 5 for sampling site locations)

	HH30	HH31	HH32	HH33	HH34
Count	21	21	21	21	21
Geomean	3.7	4.7	3.9	4.1	3.2
Est. 90^{th}	9.5	16.0	12.8	13.0	6.1
Class.	A	A	A	A	A

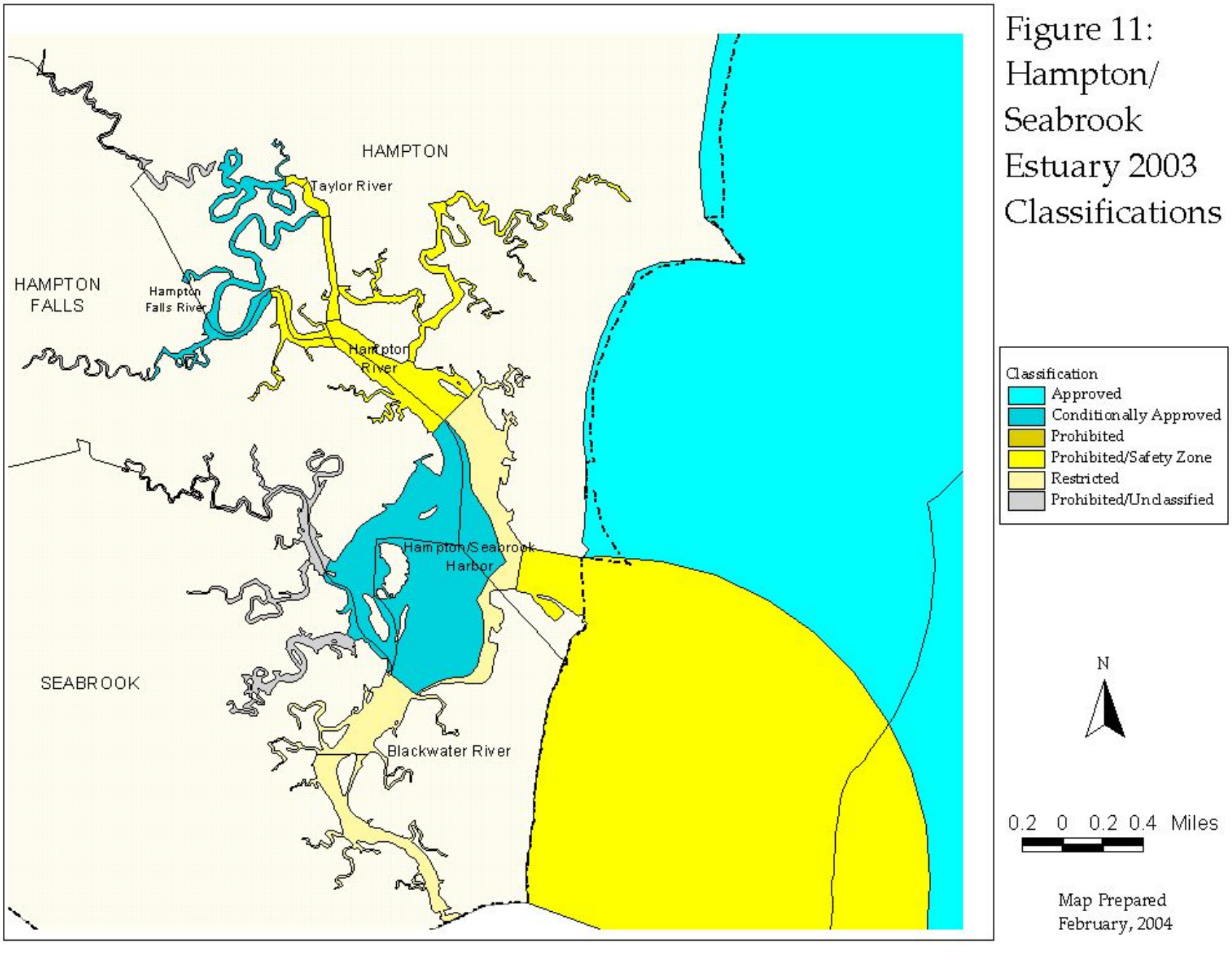

Figure 11: Hampton/ Seabrook Estuary 2003 Classifications